



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,609	07/22/2003	Satoshi Seo	12732-087002	5062

26171 7590 09/08/2006

FISH & RICHARDSON P.C.  
P.O. BOX 1022  
MINNEAPOLIS, MN 55440-1022

EXAMINER

THOMPSON, CAMIE S

ART UNIT PAPER NUMBER

1774

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/623,609

Applicant(s)

SEO ET AL.

Examiner

Camie S. Thompson

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed June 27, 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 129-200 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 129-200 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Applicant's amendment and accompanying remarks filed June 27, 2006 are acknowledged.
2. Examiner acknowledges amended claims 129-136, 140, 143, 148, 151, 156, 159, 164, 167, 185, 17, 189, 191, 193, 195, 197 and 199.
3. The rejection of claims 129-130, 133-134, 137-144 and 153-160 under 35 U.S.C. 103(a) as being unpatentable over Shi et al., U.S. Patent Number 6,130,001 is withdrawn due to applicant's argument.
4. The rejection of claims 131, 136, 145-152, and 161-200 under 35 U.S.C. 103(a) as being unpatentable over Shi et al., U.S. Patent Number 6,130,001 in view of Thompson et al., U.S. Patent Number 6,303,238 is withdrawn due to applicant's argument.

### *Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 129-200 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aziz et al., U.S. Patent Number 6,765,348.

The Aziz reference discloses an organic light emitting device comprising a first electrode (an anode); a light-emitting region comprising an organic luminescent material and a second

Art Unit: 1774

electrode (column 5, line 20-column 8, line 50). Additionally, the reference discloses that the light-emitting region is situated on and in contact with the anode. The embodiments of the Aziz reference include the light-emitting region comprising an organic luminescent material as a dopant. Also, the reference discloses that the light-emitting region comprises hole transport and electron transport materials as the organic luminescent material (see reference claims).

Reference claims 21 of the reference discloses that the light emitting region can further comprise at least one of a hole transport region adjacent to the anode and an electron transport region adjacent to the cathode. The reference discloses that the light-emitting region comprises an organic luminescent material that can be doped; a hole transporting region and an electron transporting region. Aziz discloses that the light-emitting region has thickness of typically 20 nm to about 200 nm. Also, Aziz discloses that the organic light-emitting device can be used in various types of displays such as computer monitors, televisions and other electronic devices (see column 21, lines 55-68). It is disclosed that the hole transport materials and electron transport materials can be used as the organic luminescent material. Column 10 discloses that the light emitting material can be rubrene, anthracene or polyfluorene. Additionally, the reference discloses hole transport materials, electron transport materials, fluorescent materials and phosphorescent materials used as dopants for the organic luminescent material in the light-emitting region (see paragraph 0061-0069). The reference discloses the use of perylene, rubene, aromatic tertiary amines such as 4,4'-bis[N-(3-methylphenyl)-N-phenyl-amino]biphenyl, oxadiazole compounds and tris(8-quinolinolato) aluminum as hole transport and electron transport materials, respectively (see reference claim 28). The reference discloses that the dopant is present in the amount of 0.01 weight percent to about 25 weight percent. Column 16,

Art Unit: 1774

lines 30-51 of the reference discloses that the fac tris(2-phenylpyridine) iridium can be used as a dopant along with other dopants such as fluorescent dyes, lanthanide metal chelate complexes. Column 20, lines 30-53 (Example 2) of the reference disclose that the hole transport region is about 80 nm thick and the electron transport region is about 80 nm thick. Aziz discloses a dopant in the light emitting region. Aziz does not disclose that the dopant is only in a portion, or central portion of the light-emitting region. With the light emitting region having a hole transport material, electron transport material, luminescent material and dopant, the light emitting region acts as a charge carrier and emitter. The dopant being present in a portion of the light emitting region affects the luminescence efficiency of the region when it acts as an emitter. Therefore, it would have been obvious to one of ordinary skill in the art to have the dopant in only a portion of the light emitting region in order to enhance the emission of the light emitting region that acts as an emitter.


### ***Response to Arguments***

7. Applicant's arguments with respect to claims 129-200 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L. Dye, can be reached at (571) 272-3186. The fax phone number for the Group is 571-273-8300.

Art Unit: 1774

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
RENA DYE  
SUPERVISORY PATENT EXAMINER  
A.U. 1774 9/5/04